

APPENDIX

2. A method for distributing application, system and network specification information to functional elements controlling N hosts instantiating M managed characteristic applications in a distributed environment, comprising:

preparing first specification files in a language providing a syntax adapted to describe system and network specification information;

preparing second specification files in the language providing application software system structure, capabilities, dependencies, and requirements for the M managed characteristic applications;

compiling the first and second specification files to thereby generate specification objects; and

providing an application programming interface (API) permitting the functional elements to access the specification information using API calls.

3. The method as recited in claim 2, wherein the second specification files describe the application software system structure in terms of systems, subsystems, paths, applications and processes.

4. The method as recited in claim 2, wherein the second specification files further provide Quality of Service (QoS) requirements on an event basis.

5. The method as recited in claim 2, wherein the second specification files further provide survivability requirements for the M managed characteristic applications.

6. The method as recited in claim 2, wherein the second specification files further provide data flow path requirements in terms of both structure and Quality of Service (QoS) requirements for the M managed characteristic applications.

7. The method as recited in claim 2, wherein one of the M managed characteristic applications comprises a scalable application.

8. The method as recited in claim 2, wherein one of the M managed characteristic applications comprises a fault tolerant application, where the degree of fault tolerance is selectable by a user.

9. The method as recited in claim 2, wherein one of the M managed characteristic applications comprises a selectable priority application.

10. The method as recited in claim 2, wherein the second specification files identify a script file to be employed when a respective of the M managed characteristic applications is shut down.

11. The method as recited in claim 2, wherein the second specification files identify a signal to be employed to indicate when a respective of the M managed characteristic applications is to be shut down.

12. The method as recited in claim 2, wherein the second specification files further provide environmental variables associated with the M managed characteristic applications.

13. The method as recited in claim 2, wherein the second specification files further provide command line arguments associated with the M managed characteristic applications.

14. The method as recited in claim 2, wherein the second specification files further provide command line arguments requiring resolution at application runtime associated with the M managed characteristic applications.

15. The method as recited in claim 2, wherein the second specification files further provide startup and shutdown dependencies between the M managed characteristic applications.

16. The method as recited in claim 2, wherein the second specification files further provide startup and shutdown dependencies between applications including the M managed characteristic applications.

17. The method as recited in claim 2, wherein the second specification files further provide application states defined in terms of received instrumentation data values, the length of time a respective application has been running, and/or the set of processes that are currently running.

18. The method as recited in claim 2, wherein:
one of the M managed characteristic applications comprises a scalable application; and
one of the second specification files identifies whether the scalable application can be restarted upon failure and the minimum and maximum number of copies of the scalable application that can be instantiated in the distributed environment.

19. The method as recited in claim 2, wherein:
one of the M managed characteristic applications comprises a scalable application; and
one of the second specification files identifies the type of scalability practiced by the scalable application.

20. A method for distributing application, system and network specification information to functional elements including a program control function and a resource manager function controlling N hosts instantiating M managed characteristic applications in a distributed environment, comprising:
preparing first specification files in a language providing a syntax adapted to describe system and network specification information;

preparing second specification files in the language providing application software system structure, capabilities, dependencies, and requirements for the M managed characteristic applications;

compiling the first and second specification files to thereby generate specification objects organized into a system specification library; and

linking the program control function and the resource manager function to the system specification library.

21. The method as recited in claim 20, wherein the second specification files describe the application software system structure in terms of systems, subsystems, paths, applications and processes.

22. The method as recited in claim 20, wherein the second specification files further provide Quality of Service (QoS) requirements on an event basis.

23. The method as recited in claim 20, wherein the second specification files further provide survivability requirements for the M managed characteristic applications.

24. The method as recited in claim 20, wherein the second specification files further provide data flow path requirements in terms of both structure and Quality of Service (QoS) requirements for the M managed characteristic applications.

25. The method as recited in claim 20, wherein one of the M managed characteristic applications comprises a scalable application.

26. The method as recited in claim 20, wherein one of the M managed characteristic applications comprises a fault tolerant application, where the degree of fault tolerance is selectable by a user.

27. The method as recited in claim 20, wherein one of the M managed characteristic applications comprises a selectable priority application.

28. The method as recited in claim 20, wherein the second specification files identify a script file to be employed when a respective of the M managed characteristic applications is shut down.

29. The method as recited in claim 20, wherein the second specification files identify a signal to be employed to indicate when a respective of the M managed characteristic applications is to be shut down.

30. The method as recited in claim 20, wherein the second specification files further provide environmental variables associated with the M managed characteristic applications.

31. The method as recited in claim 20, wherein the second specification files further provide command line arguments associated with the M managed characteristic applications.

32. The method as recited in claim 20, wherein the second specification files further provide command line arguments requiring resolution at application runtime associated with the M managed characteristic applications.

33. The method as recited in claim 20, wherein the second specification files further provide startup and shutdown dependencies between the M managed characteristic applications.

34. The method as recited in claim 20, wherein the second specification files further provide startup and shutdown dependencies between applications including the M managed characteristic applications.

35. The method as recited in claim 20, wherein the second specification files further provide application states defined in terms of received instrumentation data values, the length of time a respective application has been running, and/or the set of processes that are currently running.

36. The method as recited in claim 20, wherein:

one of the M managed characteristic applications comprises a scalable application; and

one of the second specification files identifies whether the scalable application can be restarted upon failure and the minimum and maximum number of copies of the scalable application that can be instantiated in the distributed environment.

37. The method as recited in claim 20, wherein:

one of the M managed characteristic applications comprises a scalable application; and

one of the second specification files identifies the type of scalability practiced by the scalable application.